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Compiled by Devika William-Yu (SE2 Math Coach)

## GRADE THREE EQAO QUESTIONS: Measurement

### Overall Expectations

MV1	<ul style="list-style-type: none"> <li>estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using standard units</li> </ul>
MV2	<ul style="list-style-type: none"> <li>compare, describe, and order objects, using attributes measured in standard units</li> </ul>

Year	MV1	MV2
Spring 2006	MC12 MC13 MC35	MC1 MC23 MC34 OR28
Spring 2007	MC12 MC13 MC20 MC33	MC16 MC17 MC21 MC32 OR10
Spring 2008	MC11 MC12 MC25 MC31 OR29	MC16 MC17 MC24 MC36
Spring 2009	MC 11 MC13 MC24 MC31 OR10	MC16 MC17 MC25 MC35
Spring 2010	MC15 MC17 MC24 MC30	MC10 MC16 MC23 MC34 OR8
Spring 2011	MC11 MC14 MC18 MC32	MC21 MC23 MC24 MC31 OR26

Year	Knowledge & Understanding	Problem Solving (Thinking)	Application
Spring 2009	MC11 MC13 MC16 MC17	MC35	MC24 MC25 MC31 OR10
Spring 2010	MC15 MC16 MC17 MC23	MC34 OR8	MC10 MC24 MC30
Spring 2011	MC11 MC21 MC24 MC32	MC31 OR26	MC14 MC18 MC23

# MEASUREMENT: Attributes, Units, and Measurement Sense

Grade 2	Grade 3	Grade 4
<b>Overall Expectation #1</b>		
- Estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using non-standard units and standard units	- Estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using standard units	- Estimate, measure, and record length, perimeter, area, mass, capacity, volume, and elapsed time, using a variety of strategies
<b>Specific Expectations</b>		
- Choose benchmarks – in this case, personal referents – for a centimetre and a metre to help them perform measurement tasks		
- Estimate and measure length, height, and distance, using standard units (i.e., centimetre, metre) and non-standard units	- Estimate, measure, and record length, height, and distance, using standard units (i.e., centimetre, metre, kilometre)	- Estimate, measure, and record length, height, and distance, using standard units (i.e., millimetre, centimetre, metre, kilometre)
- Record and represent measurements of length, height, and distance in a variety of ways		
- Select and justify the choice of a standard unit (i.e., centimetre or metre) or a nonstandard unit to measure length		
	- Draw items using a ruler, given specific lengths in centimetres	- Draw items using a ruler, given specific lengths in millimetres or centimetres
- Estimate, measure, and record the distance around objects, using non-standard units	- Estimate, measure, and record the perimeter of two-dimensional shapes, through investigation using standard units	- Estimate, measure using a variety of tools and strategies, and record the perimeter and area of polygons
- Estimate, measure, and record area, through investigation using a variety of non-standard units	- Estimate, measure (i.e., using centimeter grid paper, arrays), and record area	
- Estimate, measure, and record the capacity and/or mass of an object, using a variety of non-standard units	- Choose benchmarks for a kilogram and a litre to help them perform measurement tasks	- Estimate, measure, and record the mass of objects, using the standard units of the kilogram and the gram
	- Estimate, measure, and record the mass of objects using the standard unit of the kilogram or parts of a kilogram	
	- Estimate, measure, and record the capacity of containers, using the standard unit of the litre or parts of a litre	- Estimate, measure, and record the capacity of containers, using the standard units of the litre and the millilitre
		- Estimate, measure using concrete materials, and record volume, and relate volume to the space taken up by an object
- Tell and write time to the quarter-hour, using demonstration digital and analogue clocks	- Read time using analogue clocks, to the nearest five minutes, and using digital clocks and represent time in 12-hour notation	- Estimate, measure (i.e., using an analogue clock), and represent time intervals to the nearest minute
- Construct tools for measuring time intervals in non-standard units		
		- Estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in five-minute intervals, hours, days, weeks, months, or years
- Use a standard thermometer to determine whether temperature is rising or falling	- Estimate, read (i.e., using a thermometer), and record positive temperatures to the nearest degree Celsius (i.e., using a number line; using appropriate notation)	
- Describe how changes in temperature affect everyday experiences	- Identify benchmarks for freezing, cold, cool, warm, hot, and boiling temperatures as they relate to water and for cold, cool, warm, and hot temperatures as they relate to air	

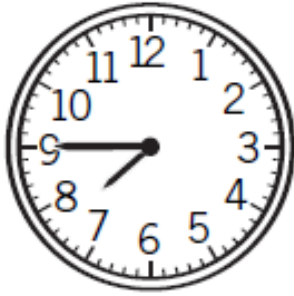
## MEASUREMENT: Measurement Relationships

Grade 2	Grade 3	Grade 4
<b>Overall Expectation #2</b>		
- Compare, describe, and order objects, using attributes measured in non-standard units and standard units	- Compare, describe, and order objects, using attributes measured in standard units	- Determine the relationships among units and measurable attributes, including the area and perimeter of rectangles
<b>Specific Expectations</b>		
	- Compare standard units of length (i.e., centimetre, metre, kilometre) and select and justify the most appropriate standard unit to measure length	- Select and justify the most appropriate standard unit (i.e., millimetre, centimetre, decimetre, metre, kilometre) to measure the side lengths and perimeters of various polygons
	- Compare and order objects on the basis of linear measurements in centimetres and/or metres in problem-solving contexts	- Describe, through investigation, the relationship between various units of length (i.e., millimetre, centimetre, decimetre, metre, kilometre)
	- Compare and order various shapes by area, using congruent shapes and grid paper for measuring	
- Describe, through investigation, the relationship between the size of a unit of area and the number of units needed to cover a surface	- Describe, through investigation using grid paper, the relationship between the size of a unit of area and the number of units needed to cover a surface	
		- Determine, through investigation, the relationship between the side lengths of a rectangle and its perimeter and area
		- Pose and solve meaningful problems that require the ability to distinguish perimeter and area
		- Compare, using a variety of tools, two-dimensional shapes that have the same perimeter or the same area
- Compare and order a collection of objects by mass and/or capacity, using non-standard units	- Compare and order a collection of objects, using standard units of mass (i.e., kilogram) and/or capacity (i.e., litre)	- Compare and order a collection of objects, using standard units of mass (i.e., gram, kilogram) and/or capacity (i.e., millilitre, litre)
		- Select and justify the most appropriate standard unit to measure mass (i.e., milligram, gram, kilogram) and the most appropriate standard unit to measure the capacity of a container (i.e., millilitre, litre)
		- Determine, through investigation, the relationship between millilitres and litres
		- Determine, through investigation, the relationship between grams and kilograms
- Determine, through investigation, the relationship between days and weeks and between months and years	- Solve problems involving the relationships between minutes and hours, hours and days, days and weeks, and weeks and years, using a variety of tools	- Solve problems involving the relationship between years and decades, and between decades and centuries

## GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1  
Spring 2006

- 12** The picture of the clock below shows the time when Mary finishes her breakfast.



What time is shown on this clock?

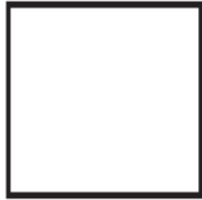
- ☐ 7:15
- ☐ 7:45 \*
- ☐ 8:15
- ☐ 8:45

# GRADE THREE EQAO QUESTIONS: Measurement

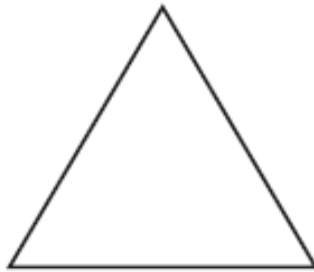
Overall Expectation #1

Spring 2006

- 13** Use your ruler to measure the perimeter of each of the following shapes.



W



X



Y



Z


Which shape has the greatest perimeter?

- ☐ Shape W
- ☐ Shape X
- ☐ Shape Y \*
- ☐ Shape Z

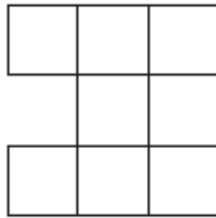
# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2006

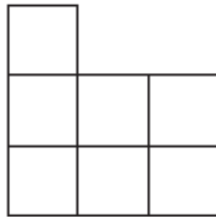
**35** In the following figures, each  represents 1 square unit. Which figure has a perimeter of 16 units and an area of 7 square units?

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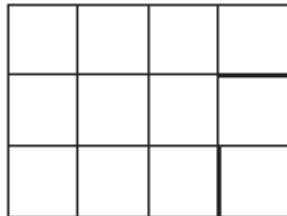


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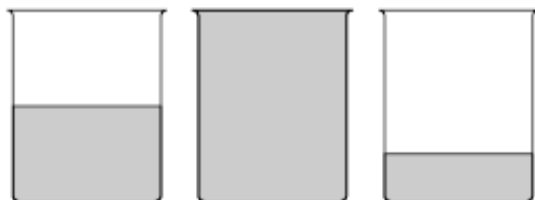


# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2007

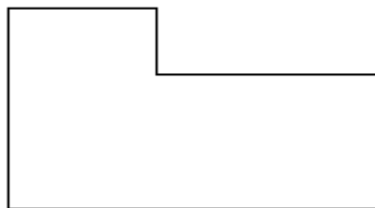
- 12** Kyle has 3 one-litre containers with some juice in each, as shown in the picture below.



Which is closest to the total amount of juice Kyle has?

- ☐ one litre
- ☐ one and three-quarter litres
- ☐ two litres
- ☐ two and a quarter litres

- 13** Use a ruler to measure the perimeter of the shape below.



Which is closest to the perimeter of the shape?

- ☐ 14 centimetres
- ☐ 15 centimetres
- ☐ 16 centimetres
- ☐ 17 centimetres

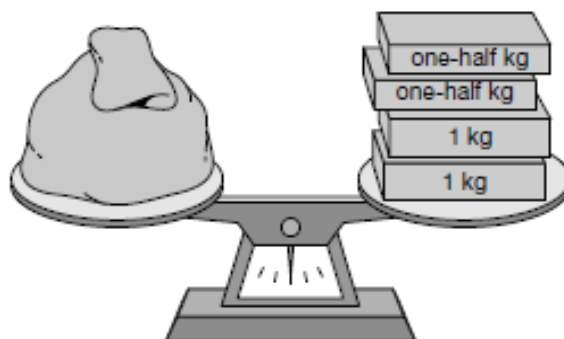
- 20** Use a ruler to measure the length of the pencil shown in the picture below.



Which of the following is closest to the length of the pencil?

- ☐ 5 m
- ☐ 6 m
- ☐ 5 cm
- ☐ 6 cm

- 33** What is the mass of the bag of coins shown in the picture below?



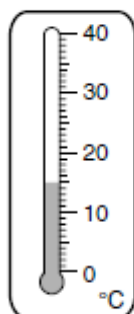
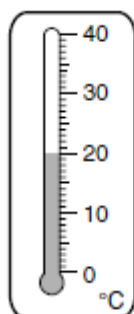
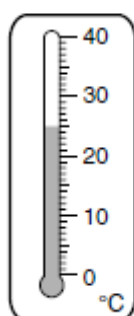
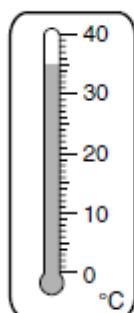
- ☐ 2 kg
- ☐ 3 kg
- ☐ 4 kg
- ☐ 5 kg

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2008

**11** Which of the following thermometers shows 25 °C?

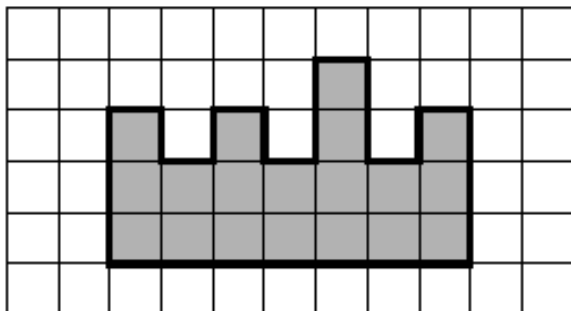
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# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2008

- 12** The diagram below shows the outline of a shape.



What is the perimeter of the shape?

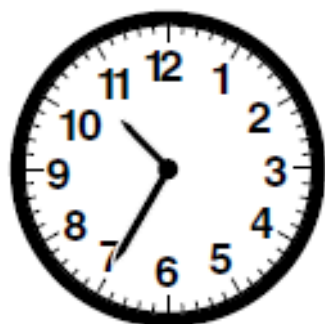
- ☐ 19 units
- ☐ 20 units
- ☐ 25 units
- ☐ 28 units

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2008

**25** Which clock shows 7:50?

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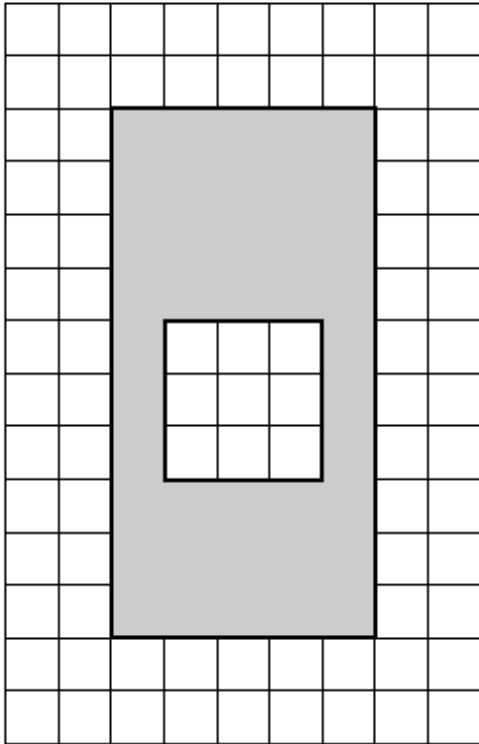
# GRADE THREE EQAO QUESTIONS: Measurement


Overall Expectation #1

Spring 2008

- 31** Carl has a piece of grey construction paper. He cuts out a square-shaped section, as shown on the grid below.

Construction Paper on a Grid



Each  represents 1 square unit.

What is the area of the remaining piece of grey construction paper?

- ☐ 9 square units
- ☐ 30 square units
- ☐ 41 square units
- ☐ 50 square units

# GRADE THREE EQAO QUESTIONS: Measurement

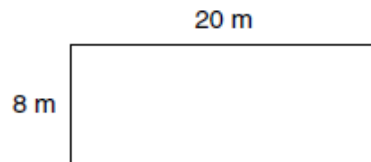
Overall Expectation #1

Spring 2008

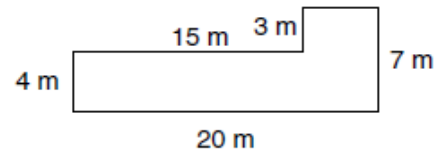
- 29 Oakwood School wants to build a new kindergarten playground.

The principal has two models to choose from and wants the playground with the larger perimeter.

Playground A



Playground B



Which playground has the larger perimeter?

Show your work.

Playground \_\_\_\_\_ has the larger perimeter.

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2009

**11** Children are playing in the snow.  
Which is the most likely temperature outside?

- ☐ 32 °C
- ☐ 20 °C
- ☐ 12 °C
- ☐ 0 °C

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2009

- 13** Which clock shows the same time as the digital clock?





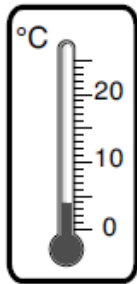
# GRADE THREE EQAO QUESTIONS: Measurement

## Overall Expectation #1

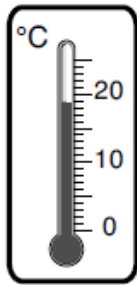
Spring 2009

- 24** Mrs. Moore's class records the outside temperature each morning for a week. On Wednesday, they record the temperature as  $15^{\circ}\text{C}$ . On Thursday, the temperature is 4 degrees cooler. Which thermometer matches the temperature reading for Thursday?

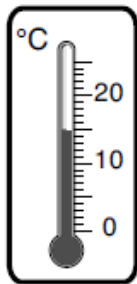
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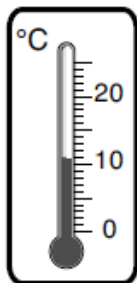
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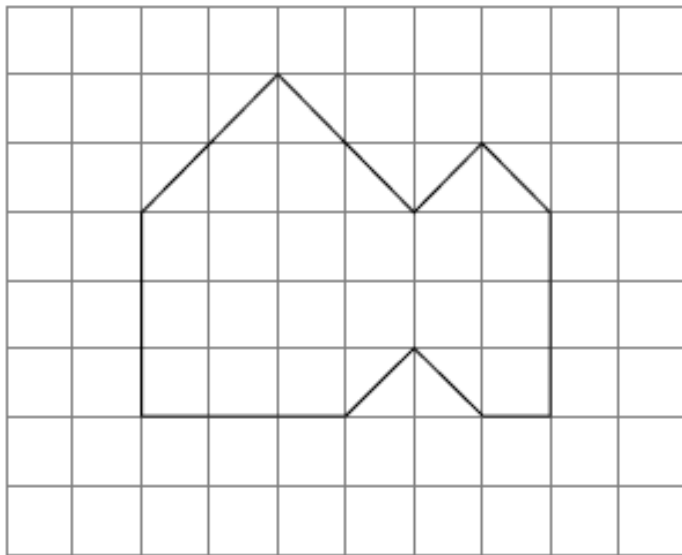


# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2009

**31** What is the area of this shape?



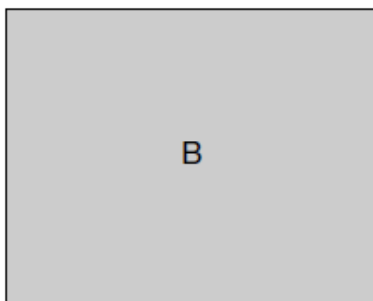
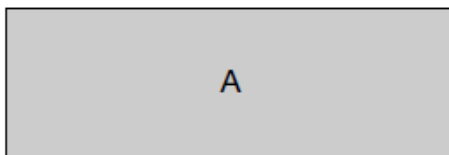
- ☐ 18 square units
- ☐ 20 square units
- ☐ 22 square units
- ☐ 26 square units

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2009

**10** Look at the rectangles below.



Which rectangle has the greater perimeter?

Justify your answer.

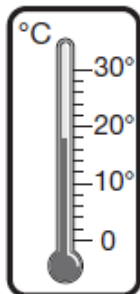
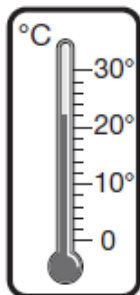
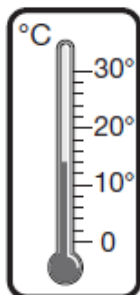
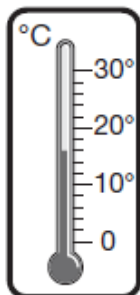
Rectangle \_\_\_\_\_ has the greater perimeter.

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2010

**15** Which thermometer shows 16 °C?



**17** Look at the clock below.



What time is shown on the clock?

☐ 10:15

☐ 3:50

☐ 3:10

☐ 2:50

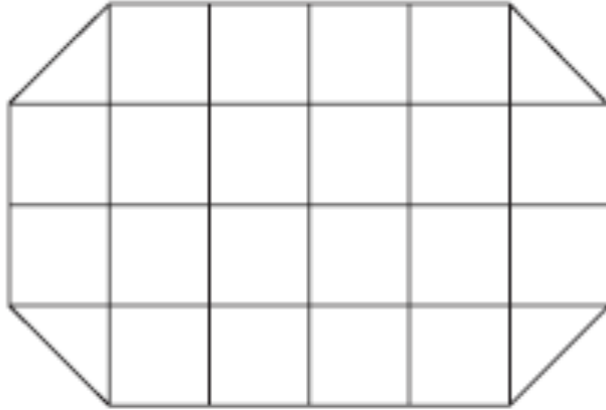


# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2010

**24** What is the area of this shape?



= 1 square unit

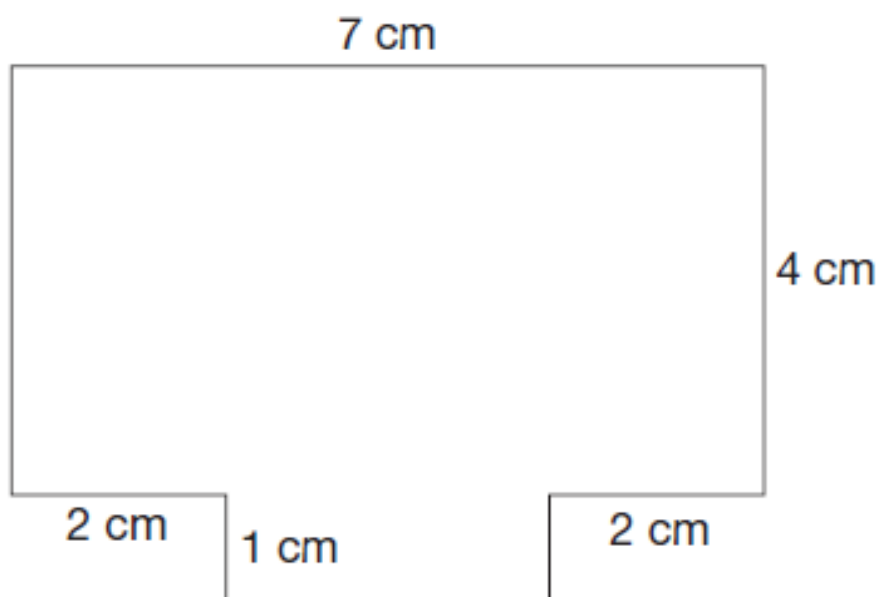
- ☐ 24 square units
- ☐ 22 square units
- ☐ 20 square units
- ☐ 16 square units

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2010

**30** Look at the shape below.



What is the perimeter of the shape?

- ☐ 16 cm
- ☐ 21 cm
- ☐ 23 cm
- ☐ 24 cm

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2011


**11** Which clock shows 10:45?




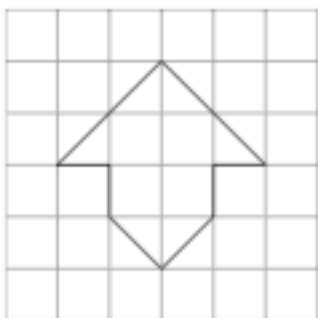
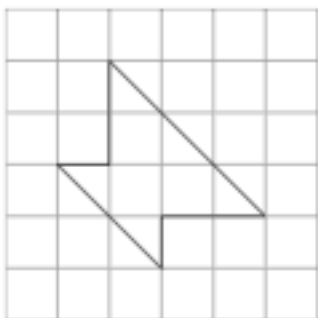
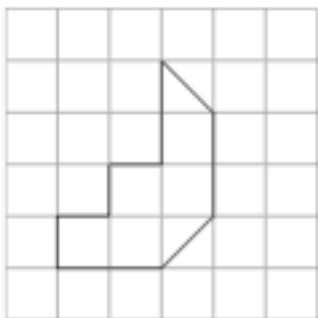
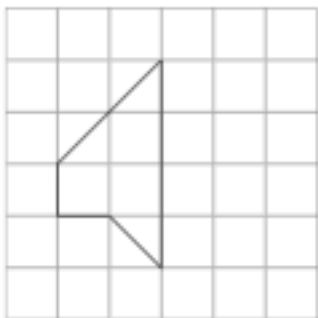
# GRADE THREE EQAO QUESTIONS: Measurement

## Overall Expectation #1

Spring 2011

 Which shape has a total area of 6 square units?

 = 1 square unit



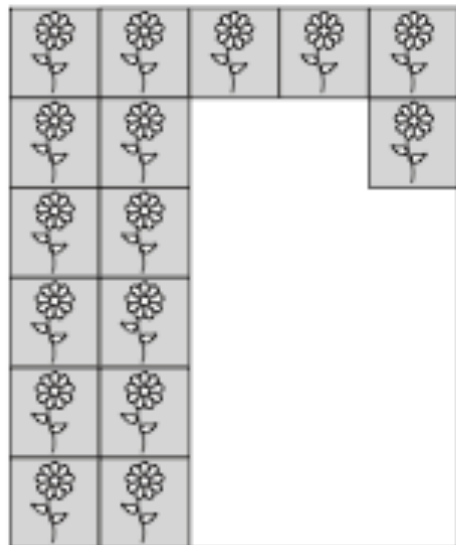


# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2011

- 18** Fiona is organizing identical stickers on a page in her scrapbook as shown below.



How many more of these stickers does Fiona need to fill her page?

- ☐ 30
- ☐ 29
- ☐ 16
- ☐ 14

## GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #1

Spring 2011

**32** Peter notices that the puddles outside are starting to freeze.

Which of the following could be the temperature outside?

- ☐ 20 °C
- ☐ 10 °C
- ☐ 5 °C
- ☐ 0 °C

# GRADE THREE EQAO QUESTIONS: Measurement

## Overall Expectation #2

Spring 2006

**1** Which of the following could be the temperature on a warm, sunny day?

- ☐  $-23^{\circ}\text{C}$
- ☐  $5^{\circ}\text{C}$
- ☐  $25^{\circ}\text{C}^*$
- ☐  $100^{\circ}\text{C}$

**23** David must wait 1 year before he is old enough to join the baseball team.

Which of the following is closest to the total number of days in 1 year?

- ☐ 356
- ☐ 360
- ☐  $365^*$
- ☐ 376

**34** Which set of measurements is listed in order from smallest to largest?

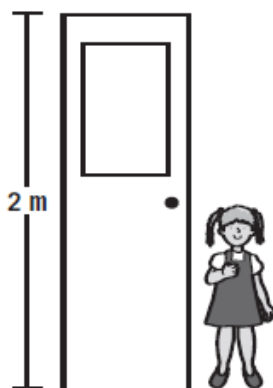
- ☐ 7 cm, 20 cm, 1 m, 3 m  $^*$
- ☐ 20 cm, 7 cm, 3 m, 1 m
- ☐ 3 m, 1 m, 20 cm, 7 cm
- ☐ 1 m, 3 m, 7 cm, 20 cm

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2006

- 28** The picture shows Tarah standing next to her front door.



Tarah's older brother, Rhaj, is 50 cm taller than Tarah.

About how tall is Rhaj?

Explain your thinking.

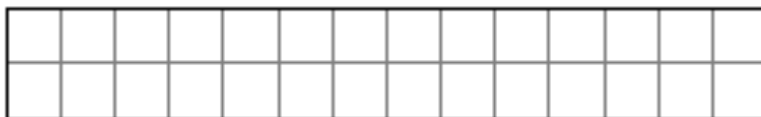
Rhaj is about \_\_\_\_\_ tall.

# GRADE THREE EQAO QUESTIONS: Measurement

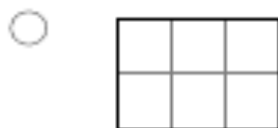
Overall Expectation #2

Spring 2007

- 16** The diagram below represents a new tabletop in the lunchroom. Devan determines that the area of the tabletop is 7 square units.



Which is the square unit Devan uses to measure the area of this tabletop?



## GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2007

**17** Which unit of measure is the most appropriate to use to record the distance between the cities of Toronto and Ottawa?

- ☐ kilometre
- ☐ litre
- ☐ kilogram
- ☐ centimetre

**32** John's baby sister is 30 days old. Which of the following is closest to her age in weeks?

- ☐ 4
- ☐ 7
- ☐ 30
- ☐ 52

**21** William records the lengths of four objects in the table below.

Object	Length
Box	2 m
Rug	150 cm
Bulletin board	3 m
Bathroom floor	400 cm

Which shows the lengths from the table listed in order from greatest to least?

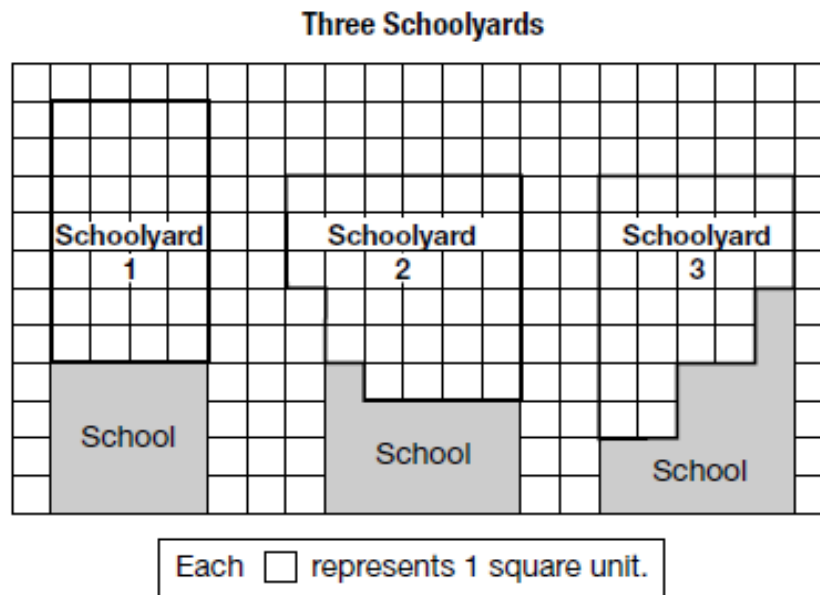
- ☐ 3 m, 2 m, 400 cm, 150 cm
- ☐ 150 cm, 2 m, 3 m, 400 cm
- ☐ 400 cm, 150 cm, 3 m, 2 m
- ☐ 400 cm, 3 m, 2 m, 150 cm

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2007

**10** The diagram below shows three schoolyards.



Which schoolyard has the greatest area?

Explain your answer.

Schoolyard \_\_\_\_\_ has the greatest area.

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2008

**16** Which is the best unit to use to measure the perimeter of the school building?

- ☐ m
- ☐ cm
- ☐ kg
- ☐ km

**17** Which set of measurements is listed in order from least to greatest?

- ☐ 3 cm, 1 km, 98 cm
- ☐ 5 cm, 100 cm, 2 m
- ☐ 1 km, 2 m, 15 cm
- ☐ 1 m, 3 m, 5 cm

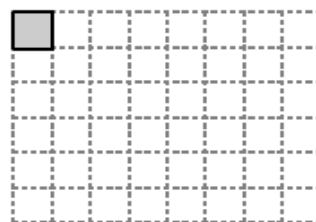
**36** Jaelend will leave for vacation in exactly one day. How many hours is it until he leaves?


- ☐ 1
- ☐ 7
- ☐ 12
- ☐ 24

**24** Each of the grids below represents Miriam's bedroom floor.

Grid 1

Miriam's Bedroom Floor

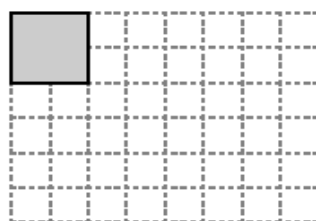



 represents 1 square tile.

If she uses the shaded square tile shown in Grid 1, Miriam will need 48 square tiles to cover her bedroom floor.

Grid 2

Miriam's Bedroom Floor



 represents 1 square tile.

If she uses the shaded square tile shown in Grid 2, what will be the total number of square tiles Miriam needs to cover her bedroom floor?

- ☐ 12
- ☐ 24
- ☐ 36
- ☐ 48



# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2009

**16** How many days are in 4 weeks?




- ☐ 7
- ☐ 14
- ☐ 28
- ☐ 30

**25** Which of the following lists the measurements in order from longest to shortest?













- ☐ 90 cm; 1 m 34 cm; 223 cm
- ☐ 223 cm; 1 m 34 cm; 90 cm
- ☐ 223 cm; 90 cm; 1 m 34 cm
- ☐ 1 m 34 cm; 90 cm; 223 cm

**17** Look at the table below.

Mass of Objects

Object	Mass
 Book	one kg
 Bag of marbles	one-quarter kg
 Bananas	one-half kg

Which of the following shows the objects in order from lightest to heaviest?

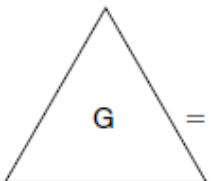
- ☐   
- ☐   
- ☐   
- ☐   

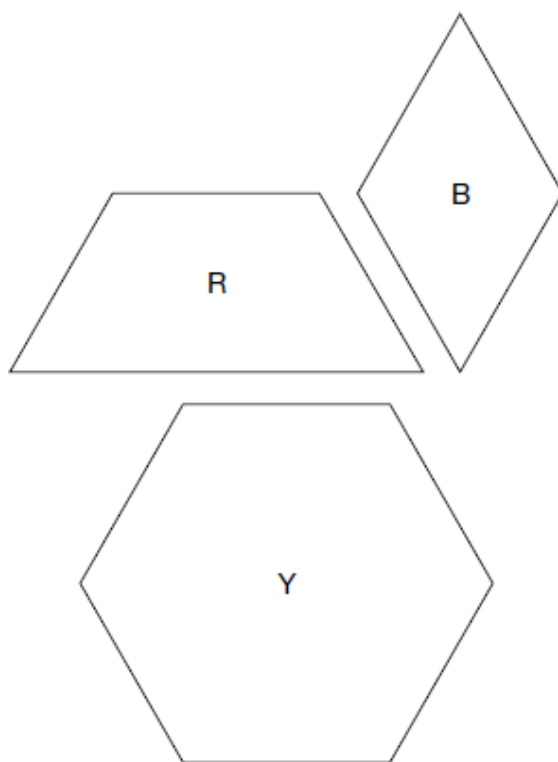
# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2009

**35** Using the green triangle, find the total area of these pattern blocks.

Legend	
R = Red B = Blue Y = Yellow	 = 1 unit



What is the total area of all 3 pattern blocks?

- ☐ 9 units
- ☐ 10 units
- ☐ 11 units
- ☐ 12 units

# GRADE THREE EQAO QUESTIONS: Measurement

## Overall Expectation #2

Spring 2010

**10** Which list shows the lengths from shortest to longest?

- ☐ 1 m 50 cm; 140 cm; 1 m
- ☐ 1 m; 1 m 50 cm; 140 cm
- ☐ 140 cm; 1 m 50 cm; 1 m
- ☐ 1 m; 140 cm; 1 m 50 cm

**23** How many minutes are in 1 hour?

- ☐ 7
- ☐ 24
- ☐ 30
- ☐ 60

**34** Luke's baby sister is 36 days old. About how many weeks old is Luke's sister?

- ☐ 1
- ☐ 5
- ☐ 6
- ☐ 7

**16** Jeremy measures the lengths of some objects and records them in the table below.

**Objects Measured**

Object	Length
Eraser	4
Pencil	15
Desk	60

Which unit does Jeremy use to measure the objects?

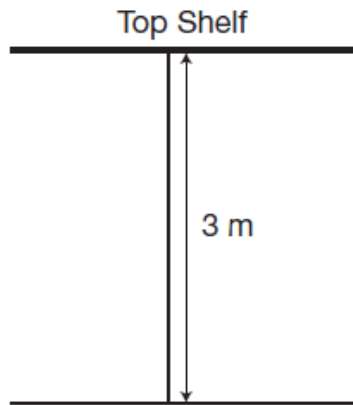
- ☐ centimetre
- ☐ kilometre
- ☐ metre
- ☐ litre

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2010

- 8 Lorenzo's top shelf is 3 m high.



He can reach a height of 180 cm.

He stands on a box that is 95 cm tall.

Can Lorenzo now reach his top shelf?

Circle one:    Yes    No

Justify your answer.

## GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2011

**21** Rasheed's brother is 6 weeks old.  
How many days old is Rasheed's brother?

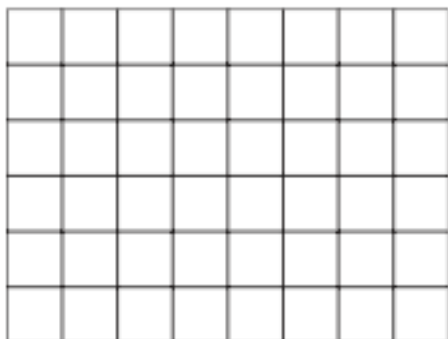
- ☐ 6 days
- ☐ 30 days
- ☐ 42 days
- ☐ 72 days

# GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2011

23 Look at the grid below.

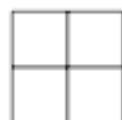


Which of the following shapes can be used 12 times to cover the grid completely, with no gaps or overlap?

☐



☐



☐



☐



## GRADE THREE EQAO QUESTIONS: Measurement

Overall Expectation #2

Spring 2011

**24** Which of the following is a good estimate of the height of a classroom door?

- ☐ 2 m
- ☐ 4 cm
- ☐ 6 m
- ☐ 8 cm

**31** Each time Haden practises piano, he plays for 15 minutes.

How many times does he practise if he plays for a total of 2 hours?

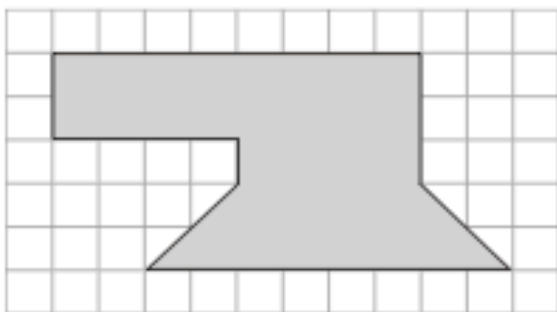
- ☐ 4
- ☐ 8
- ☐ 15
- ☐ 30

# GRADE THREE EQAO QUESTIONS: Measurement

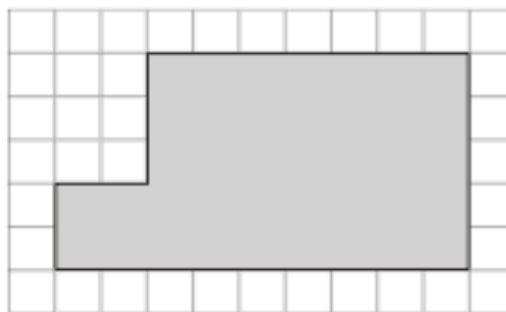
Overall Expectation #2

Spring 2011


**26** Look at the garden designs shaded on the grids below.



Garden 1



Garden 2

 = 1 square unit

How much larger is the area of Garden 2 than the area of Garden 1?

Show your work.

